

(RE) CONSIDERING “CRISIS MANAGEMENT”: How to Deal With an Uncertain and Unknown Crisis (COVID-19)?

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1. INTRODUCTION

Businesses across the world were disrupted due to the novel COVID-19 outbreak. This outbreak's unknown nature demanded immediate and radical containment measures, including the lockdown of entire cities. These measures have severely affected business operations and the lives of millions of citizens who have to follow quarantine restrictions imposed by health authorities. Such massive disruptions were previously considered in the "crisis management" literature? What can be learned from this literature to deal with the current COVID-19 pandemic? What are the basic principles to take into account while managing the disrupting measures been taken?

Recommendations for multinational corporations like the "combination of central control with decentralized execution when responding to unexpected crises situations" (Darbonnes & Zurawska, 2017) seem insufficient to guide managers to overcome the scale and speed of ongoing crisis. In South Korea, for Moon (2020:1), "an agile-adaptive approach, a policy of transparency in communicating risk, and citizens' voluntary cooperation" were critical factors in managing COVID-19. Prescriptions for small or mega-crises (Helsloot, I.; Boin, A. & Jacobs, 2012) have not been efficiently observed for the corporate and public sectors to control such devastating lives and livelihoods pandemic. Review the content of articles published in the top ten management journals; presenting problems, principles, and challenges of managing the COVID-19 in a Contingent Center and discussing the crisis of the “crisis management” that professionals must deal with are the primary goals of this article.

Are these professionals implementing “effective management crisis” (Mitroff, Shrivastava & Udwardia, 1987) measures? Is the scientific knowledge on "crisis management" enough to combat the COVID-19 crisis, or should it be reframed (Pearson & Clair, 1998), or reconsider it? The literature review and case study are presented in the following way. First, the search and the selection of papers on "crisis management" are described. Second, the content of them published in public administration and business, management, and accountant outlets is reviewed. Third, some views of professionals working at the Committees of São Paulo's Coronavirus Contingent Center regarding the principles, problems, and challenges of implementing measures are presented. Fourth, a brief discussion on the crisis of “crisis management” is presented, and the conclusion calls for reconsidering the "management crisis" research.

2. METHODOLOGY

Top-ranked journals in management and public administration were selected from the SCImago Journal Rank (SJR). Articles with "crisis management" in their titles and keywords were searched. Just 17 documents were found searching the word "crisis management" in their titles, which indicate its minor role or low interest of the respective research communities on the issue. Two hundred seventy-six articles were found searching for "crisis management" as a keyword. However, most of them are book reviews, call for papers, congress announcements, or not related to the theme. The unexpected result was a small sample of just 32 articles. Surprisingly, no research results on “crisis management” were published by three out of ten top-ranked (SCImago index) management journals: the Journal of International Business Studies, the International Public Management Journal, and the Brookings Papers on Economic Activity. The list of journals prospected is shown in Table 1.

Table 1 SCImago top-ranked journals in the field of public administration and business, economic and accountant searched with “crisis management” in the title and keywords

Public Administration Journals	SJR	Publisher	Titles	Keywords	Selected articles
Administrative Science Quarterly	13525	Sage	1	15	1
Journal of Public Administration Research and Theory	5875	PMRA	1	25	4
Public Administration Review	4120	Wiley	5	68	15
International Public Management Journal	2915	Elsevier	1	4	0
Journal of Public Analysis and Management	2661	Wiley	1	29	1
Business, Management, and Accountant	SJR	Publisher	Titles	Keywords	Selected articles
Academy of Management Journal	10755	Academy of Management	0	29	2
Academy of Management Review	9316	Academy of Management	2	49	3
Journal of International Business Studies	5548	Palgrave Macmillan	0	13	0
Brookings Papers on Economic Activity	4663	Brookings	3	27	0
Journal of Conflict Resolutions	4341	Sage	3	27	6

Source: SCImago Index- <https://www.scimagojr.com/> and sites of the journals accessed on May 01, 2020

Following the same procedures taken by Werner (2002) to review the international management literature, the main themes explored by the articles of the final sample in the two areas of study were organized. After reading the sample's articles, they were divided into four sub-topics, without employing any formal coding content method: a) learning, b) risk management, c) crisis organization, and d) consequences and lessons. Figure 1 describes the classification considering the sub-topics, the study's focus, and the authors and years of publication of the articles.

Subject	Sub-Topic	Study's Focus	Study
CRISIS MANAGEMENT	Learning	Assessment and Critique Emergency Management Research Learned and September 11 Learning Crisis and Crisis management Learning under Uncertainty Patterns of Crisis Management Presenting Corporate Policy During Social Scientists, and Crisis Management	Gilbert and Lauren (1980) Comfort ; Waugh and Cigler (2012) Hu; Knox and Kapucu (2014) Farazmand (2007) Moynihan (2008) Brecher (1988) Marcus and Goodman (1991) Holsti (1980)
	Risk Environment	Catastrophe and the Public Service Extreme Events and Risk Perception Integrative Complexity and Crises Organizational Fragility and Extreme Events	Cohen; Eimicke and Horan (2002) Zhang; Welch and Miao (2018) Walker and Watson (1994) Comfort; (2002)
	Crisis Organization	Conceptual Lenses and Crisis Communication Crises and Priority Changes Disaster Response Government Decision and crisis International Crises Organizational Collapse Organizing and Crisis Management Public Corporation and Turbulent Environment Public Leadership and Crisis Responsibility and crisis	Garnett and Kouzmin (2007) Sosin; Smith; Hilton; Jordan (2010) Simo and Bies (2007) Rosenthal and Kouzmin (1997) Wilkenfeld; Young; Asai; Quinn (2003) Rudolph and Reppening (2002) Christensen; Per Lægread and Rykkja (2016) Hahn; Jung and Moon (2012) Boin and Hart (2003) Bundy and Pfarrer (2014)
	Consequences and Lessons	Big Questions and crisis Conflict Actions and Outcomes Crisis Management in Hindsight Effects of Crisis Orientation Empathy Affects and Management Inferences and alarming events Network Governance and Crisis Response Reframing Crisis Management What We Have Not Yet Learned and crisis	Cigler (2007) Lockhart (1978) Comfort (2007) Tjosvold (1984) König; Graf-Vlachy; Bundy; Little (2018) Pratt and Zeckhauser (1982) Moynihan, (2009) Pearson and Clair (1998) Nakamura and Kikuchi (2011)

Figure 1 Research on “crisis management” on top-ranked management journals

Source: Elaborated by the authors

Considering the relatively large number of book reviews found in the prospection phase of building this article, it seems that a significant amount of knowledge on "crisis management" is available in books or even in specialized journals like the "Journal of Contingencies and Crisis Management", "Progress in Disaster Science" or "Managing disasters". A bibliometric study and a systematic review of the literature in the books and articles published in these journals seem a promising program for future studies.

After reviewing this selected literature, a case study considering the views of professionals working at a Coronavirus Contingent Center was developed, and their opinions on principles, problems, and challenges of the measures being implemented are summarized. Around 80 senior professionals from different areas of activities of the public and the private sector are performing in committees and working groups. Face-to-face 15 interviews with Committee's members (health, economy, social protection, supply, security, and civil defense) were carried out during the second and third weeks of May 2020. In average they took 30 minutes each and the problems, principles, and challenges the interviewed were experiencing while managing the COVID-19 in the State of São Paulo were highlighted.

3. RESULTS

3.1 The Content of Private and Public “Crisis Management” Literature

What is "crisis management"? Before describing some definitions and concepts, it is equally important to know what "management" is. Textbooks of business management have taught that management functions are: planning, organizing, directing, and controlling. However,

according to Mees (2018:16), "In 1916, Henri Fayol had argued that prudence (*prévoyance* - the term is still used in French to refer to prudential matters) was a key feature of business administration". The term was mistranslated into English as "planning" and was militarized as "strategy".

Prudence as a guiding principle seems more appropriate than "planning" to deal with unknown and uncertain events of any crisis. To managed complex and conflicting situations, as mentioned by Chang and Velasco (2020:3), backward-looking epidemiological theories of a pandemic are not appropriate. For them, "economic theories are forward-looking: people's choices today – including the decision to engage or not in risky behavior that could result in infection - depend crucially on what they expect the future will bring". Backward-looking theories and forward-looking theories from different scientific areas of studies are taken into account while managing crises. However, it is crucially essential the confidence, credibility, and if the heterogeneous agents and the general population trust them.

Crises are seen as situations in which an individual's or organization's life suffers a functional disruption in their "normal" activities. Natural disasters, radical economic changes, and corporate crises – such as accidents, scandals, and product safety incidents (Marcus & Goodman, 1991) – exacerbate conflicts among different stakeholders' interests, especially the crisis victims. There are also other types of crises like family disruptions, broken social relationships, suicides, life events as birth, or loss of a loved one and health issues. These different situations are considered in the definitions or concepts of "crisis management".

Pearson and Clair (1998:61), while "reframing crises management," criticize the lack of previous research integration. They create a multidisciplinary approach that adds psychological, social-political, and technological-structural research perspectives to the idea that "organizational crisis management is a systematic attempt by organizational members with external stakeholders to avert crises or effectively manage those that do occur". For them, a crisis is the disruption of a system that can be effectively managed if preventive actions are taken. Rosenthal and Kouzmin (1997) also claim for broadening the scope of crises and crisis management studies to incorporate a political-administrative perspective.

Without discussing if the literature based on the non-historic system theory is the most appropriate for defining and managing individual or collective crises (Gilbert & Lauren, 1980), many scholars recommend preventive actions. Christensen; Læg Reid and Rykkja (2016) consider that a well-functioning governmental crisis management system needs both governance capacity and legitimacy. Confort (2007) emphasizes cognition as the capacity to recognize the degree of emerging risk to which a community is exposed. Others (Farazmand, 2007; Hahm, Jung & Moon, 2013) relate crisis and emergency management to leadership capabilities as the influence of CEO empathy (König; Graf-Vlachy; Bundy & Little, 2020) or the manager's approach to controversy in decision making (Tjosvold, 1984). Social evaluations and approval are needed (Bundy & Pfarrer, 2015), and theoretical inferences from alarming events (Pratt & Zeckhauser, 1982) can be made.

Crisis management is a set of actions - prevention, preparedness, response, and reconstruction (Boin & Hart, 2003) recommended to solving problems and offering practical suggestions to those in charge of preventing them (Rudolph & Repenning, 2002). Lack of resources and expertise are common problems outlined by the literature to deal with natural disasters, like the hurricane Katrina (Confort, 2007; Garnett, Kouzmin, 2007; Farazmand, 2007; Cigler, 2007; Simo & Bies, 2007) or other human-caused disasters as the September 11 (Cohen; Eimicke & Horan, 2002; Comfort, 2002) and the Boston Marathon bombings (Hu, Knox & Kapucu, 2014). These scholars also claim that more research is needed to understand how to effectively coordinate disaster preparedness, mitigation, response, and recovery efforts. In the Fukushima disaster (Nakamura & Kikuchi, 2011), there was a lack of rigorous management control of public and private authorities' nuclear issues.

To overcoming uncertainties and ambiguous government structures, flexibility and adaptation are vital assets (Christensen, Lægheid & Rykkja, 2016). Adaptation and learning are also stressed as crucial issues by Zhang, Wealch and Miao (2018) when examining managers' behavior in the largest fixed-route public transit agencies in the United States. For Moyanihan (2008), in the case of network response to an animal disease outbreak, the network's learning capacity is challenging. However, when considering the Incident Command Systems in various crises, Moyanihan (2009) highlights the coordination difficulties of multiple members and the importance of trust in supplementing formal control modes.

Much of the crisis management challenges are related to the lack of trust among different stakeholders dealing with a local crisis in national agencies as the Federal Emergency Management Agency – FAMA, (Confort, Waugh, & Cigler, 2012), a fiscal crisis (Sosin, Smith, Hilton, & Jordan, 2009), the Munich and Polish Crises (Walker & Watson, 1994) or openly and prolonged-lasting international conflicts. Wilkenfeld et al. (2003) studied mediation as a means for international mitigation crises and revealed that it leads to shorter crises and greater satisfaction. Holsti (1980) discusses diplomatic historians and social scientists' views in communication and collaboration on selected common interest problems. He criticizes their views as been conceptual confused, suffering theoretical difficulties, having prescriptive inadequacies, and historical insensitivity. Historical insensitivities were studied by Brecher and James (1988) in the cases of Arab-Israel international crises form 1945 to 1979 to suggest a more reliable concept of protracted conflict.

Summing up the insights from the above literature, "crisis management" is a learning process of preventing and responding to each time different disrupted natural, organizational or individual environments and behaviors. Even though not explicit in the literature reviewed, any crises present problems to be overcome following some principles considered adequate by those in charge of managing the peculiar crisis. Dealing with unknown, uncertain, but risk situation challenges are managed based on the learning capabilities of those responsible for it. The learning process of dealing with "problems" based on universal "principles" to overcome new "challenges" is at the core of "crisis management" from the private and public perspectives.

3.2 São Paulo's Contingent Center to Manage the COVID-19 Crisis and the Views of Professionals Working on It

According to Croda et al. (2020:1), "before the first COVID-19 case was reported in Brazil, several measures have been implemented, including the adjustment of the legal framework to carry out isolation and quarantine. As the cases increased significantly, new measures mainly to reduce mortality and severe cases have also been implemented." Despite the rapid preparedness actions undertaken, the country could not flatten the epidemiological curve implementing necessary countermeasures and the number of registered infected cases and deaths due to the COVID-19 spiraled. Figure 2 shows the present and future measures related to the prevention and the expansion of the pandemic.

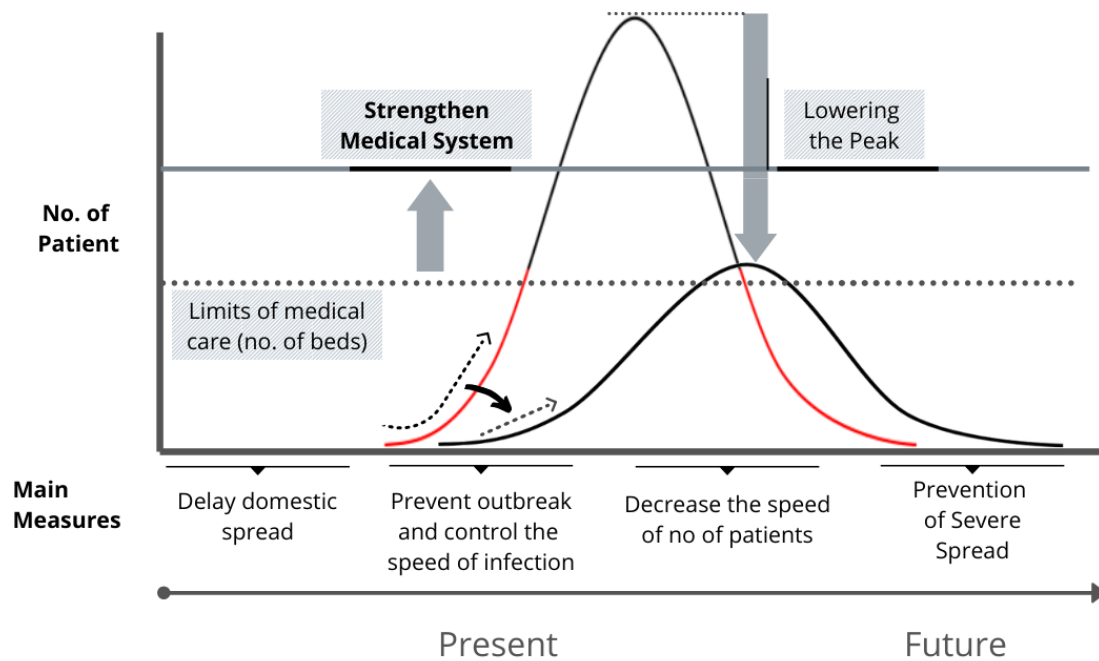


Figure 2. Countermeasures to combat Covid-19

Source: Reproduced from Shaw, Kim, Hua, 2020 with small changes

The false debate between "saving lives" vs. "saving income" stimulated by the Brazilian president has been damaging the regional authorities' efforts in managing the increasing number of infected patients. For Lancet's editorial (2020:1461), "perhaps the biggest threat to the country's COVID-19 response is its President, Jair Bolsonaro". Despite the president, observing the World Health Organization and the Health Ministry of Brazil protocols, and closely interacting with these two Institutions, State level Contingent (or emergency) Centers have been working at their full capacity.

For Boin and Hart (2010), the managers in charge of leading crisis responses face challenges of sense-making, meaning-making, decision-making, coordinating, circumscribing, consolidating, account-given, learning, and remembering. At the more operational level, their challenges are related to diagnosing (testing) and deciding, mobilizing, and organizing, containing and mitigating, informing, empowering, and coordinating and collaborating. All these challenges are experienced by a significant number of professionals from the public and private sectors working side-by-side in several committees and working groups that are the Contingent Center's core structure to manage the COVID-19 in the State of São Paulo. The committees and working groups of the Contingent Center are organized, as shown in Table 2.

Table 2 Structure of the São Paulo's Contingent Center to manage Covid-19

Key tools	Committees				
	Health	Economy	Social Protection	Extraordinary Administrative Committee	Security
Information Dashboards	Isolation and treatment	Analytical modeling	Groups served	São Paulo Plan	Death management
Legal formalization	Equipments offering	International monitoring	Service strategy	Protocols definition	Supply management support

Scenarios and Epidemiological curve	Medical supply	Sectorial analysis	Qualification	Quarantine status	Civil defense
	Human resources	Anticyclical measures	Transition plan	Economic measures	
Records and documentation	Covid-19 Tests	Public budget		Entrepreneurship, employment, and economic recovery	
		Support measures			

Working groups						
Corporate solidarity SP			Volunteering		R & D & I	
Health	Social protection	Security	Health	Civil defense	Industrial reconvention	Covid-19 research
Donation Logistic			Citizenship	Technician	Evaluation of quick tests	Isolation tools & Big data
					Technologies for hospitals	

Source: Elaborated by the authors from official public communications of São Paulo Government

The Center has been responsible for designing and monitoring the implementation of measures to manage the COVID-19. Professionals, policymakers, public authorities like the Governor, and his vice have been involved directly in monitoring activities related to the crisis management create by the pandemic. As background information, they have been carefully following Non-pharmaceutical Interventions (NPIs), strongly recommended by the WHO. They are also aware of approaches to deal with the pandemic, like the considered hard one adopted by China, the soft one adopted by Sweden, and agile-adaptive approaches implemented by South Korea and other countries and cities.

Some of the main problems, principles, and challenges of designing and implementing the measures by the five Committees of the São Paulo's Coronavirus Contingent Center were captured through interviews with three professionals of each during the first two weeks of May 2020. Due to space limitations, just short views and summaries of them are described in this article. Regarding the Health Committee, according to Health 1, *“a major challenge was the governance, especially in the beginning, to generate the information needed for decision-makers to focus on critical things. For example, the ability to obtain bed data in real-time was difficult. In a way, this is still a challenge”*.

In the Economic Committee, the learning process was the adaptation of governance, people, and information management principles. A significant principle adopted by the Committee was the celerity, as highlighted by Economic 1, *“The COVID-19 crisis requires a quick and assertive response... In the crisis, one week incurs a loss of life and an exponential increase in the number of cases. Celerity is a great principle.”* This principle has been absorbed to overcome the challenges faced by the Committee, the improvement of analysis, and governance metrics. Besides, some technical decisions have been configured as political ones, which are another obstacle to overcome: to convince the public opinion about the effectiveness of the implemented measures.

Interviewees working in the Social Protection Committee, mention that one of the main challenges has been measuring the number of people in vulnerable conditions, as it was necessary to define the group to be targeted to receive attention. Solutions were considered to involve individual micro-entrepreneurs, informal workers, and people living in deplorable conditions as thousands of them homeless in the streets of São Paulo municipalities. As pointed by Social Protection 1, it is essential to *“define the eligibility criteria...The number of people in informal work (it is usually not the number of people who are in a vulnerable situation). Perhaps we have an informal worker in terms of vulnerability. Who are the people in extreme poverty?”* For him, the principle that guides the actions of the Committee is taking care of and supporting vulnerable minorities.

Professionals working in the Supply Committee highlighted many problems faced by them: lack of time to plan, due to the chaos caused by the uncertainty of the context, and the low predictability in the definition of scenarios were the main ones. According to Supply 2, *“the big sin is the lack of communication among different government levels”*. Furthermore, this interviewee criticizes the low number of women in the Coronavirus Contingence Center and the increasing conflicts between specialists in their communications with the internal and external stakeholders. For all the interviewees of this Committee, its members' main characteristics are the ability to deal with pressure, resilience, smoothness, and proactiveness.

The interviewees of the Security Committee are all members of the Brazilian Army or State Military Police. For them, one of the main problems is to collect the information under discussion inside the different Committees. It is necessary to plan better public security measures to avoid social disorders. *“The lack of access to products made by the various professionals can generate duplication and overlapping of efforts since it is not known for certain whether inputs have already been made available by someone”* (Security 1). The interviewees understand that if it was made some communication adjustments between members of other Committees, providing them access to more sensitive, accurate, and timely data for decision-making, they could provide insights and work more proactively.

“Saving lives”, “valuing lives”, “transparency”, “integrity”, “celerity”, “care”, and “resilience” were mentioned as the guiding principles by the interviewees while dealing with the COVID-19 crisis. Some Committees are much smaller than others as it is the professional experience in dealing with crises among them. Members of the health committee mentioned that their previous experience working with the tropical epidemics like Zika or Dengue was not helping much to manage this devastating crisis. The same feeling was mentioned by many other members of the committees allocated in the more operational working groups that were not formally interviewed. They were the more pressured professionals to design and implement measures to deal with a never seen devastating natural disease in Brazil and the World.

4. DISCUSSION

4.1 The Crisis of Crisis Management

Over the past months, the spread of the COVID-19 has been steady in Asia and other regions. Latin America was an exception until February 25, 2020, when the Brazilian Ministry of Health confirmed the first case (Rodriguez-Morales et al., 2020). The response began promisingly but was soon hampered by the president's clashes with the Ministry of Health and other officials, who failed to convince him that economic fate depended on how effectively the country handled the public health emergency.

Bolsonaro's opposition to social detachment and refusal to support local authorities to impose isolation contributed to undermining compliance with these measures. Health experts were dismissed, and Bolsonaro even adopted a drug with no proven efficacy - chloroquine - to treat COVID-19 infections. Federal coordination sank. Governors - some of whom Bolsonaro considers rivals for re-election - were isolated to define their policies of distancing and guarantee a large part of their tests and equipment. Brazil also struggled to secure tests for COVID-19, making it difficult to track and control the virus in the country (Eisenhammer & Stargardter, 2020).

Bolsonaro is inspired by U.S. President Trump's attitudes and the Swedish example of dealing with the pandemic. Due to the most significant number of infected cases and deaths, the U.S. seems to be the worst example in dealing with the pandemic. Furthermore, smaller and well-developed countries may be in a better situation for the Swedish case than other

significant and persistently stagnated developing countries. Nonetheless, as pointed by Karlson, Stern, and Klein (2020), the Swedish approach "stands out as an exception in the West". In addition to the voluntary social-distancing, it is possible to affirm that the Swedish authorities' implicit goal is to reach herd immunity.

On the one hand, Sweden tried to preserve the economic balance. However, on the other, the criticism was huge for presenting higher per capita death rates than other Nordic countries and for not being able to protect the high-risk population: old and immigrants. Recently the Swedish leader infectologist, Tegnell, admitted publicly that the strategy is resulting in too many deaths. If the Swedish case may be considered the softest approach to dealing with the pandemic, the Chinese is the hardest one.

China had notably learned from the Severe Acute Respiratory Syndrome (SARS) crisis between 2002 and 2003, which improved the Government's response actions (Wu & McGoogan, 2020). Highlights from China are robust government control, proactivity of Hubei province, community governance (community watch to restrain transit of people); use of technologies (big data, 5G, health barcode); citizen collaboration, including physicians' voluntary mobility as well financial donations. Furthermore, social media strongly supported government actions, but human rights concerns were voiced in this and the international media.

The same social support was intense in the cases of other Chinese citizens living in Taiwan and Singapore. Taiwan was predicted to be one of the most affected countries due to its proximity to mainland China. However, the situation was quickly controlled. According to Wang, Ng, and Brook (2020), one of the main factors was the database's leverage, which established specific procedures for identifying infections to protect the general public and help in the correct allocation of resources. These authors pointed out that a rigid data analysis helped integrate immigration and customs to start creating real-time alerts during a clinical consultation based on travel history and clinical symptoms. It was crucial to identify and treat infected cases.

Singapore's measures in public health were quickly instituted that included procedures for aggressive contact screening and quarantine. By February 19, Singapore had 84 cases that were quickly hospitalized and had no deaths at that time (Wong, Leo, & Tan, 2020). The country took an approach due to its experience with other related diseases such as acute respiratory syndrome (SARS). From that experience, Singapore built a new National Center for Infectious Diseases and a National Laboratory for Public Health. It expanded the number of beds, storage of personal protective equipment (PPE), and masks. Furthermore, many of Singapore's investments were addressed to biomedical science and research resources to understand better infectious diseases.

South Korea also learned essential lessons from the Middle East Respiratory Syndrome (MERS) crisis in 2015, in which the Government did not succeed in responses and mitigation (Moon, 2020). Highlights from the Korea case are transparency and democracy; centralized response plan by experts; proactivity of local Government; community governance (finding suspected cases and reporting, disinfecting public spaces, supporting vulnerable groups, and producing face masks); use of technology (as the big data analysis; the development of rapid diagnosis test kit, drive-through screening method, and walk-through test booth; and the release of the mobile application), voluntarily citizen collaboration (as the hygiene practices, volunteer services, and donations and "good landlord movement").

Among the many approaches of managing the coronavirus crises, the ones that were able to build up from their previous experiences have been more successful. It seems to be in line with the public and private literature on "crisis management" that emphasizes collective learning as a critical process in managing crises. In these cases, every newest implemented measure can gain legitimacy from past experiences. However, when individuals,

organizations, governments, or even international institutions cannot timely implement measures to manage a crisis, the general population will not legitimize them. In the Asian approach of dealing with the pandemic, the support of the population was crucial.

In Western approaches, especially the non-consensual ones, like in Brazil, they generate a crisis of crisis management. Leaders, formal government committees, advocacy campaigns, or networks following political orientations not framed by the experience and the scientific knowledge do not protect lives and livelihoods. They seem to be adding more familiar paradoxes and unprecedented challenges (Yang, 2020) to the governance of the old and a new "abnormal" state of risks.

4.2 Implications, Limitations and Future Research

Concisely the main points made in the paper indicate that "crisis management" research has been developed with a disciplinary focus instead of a potentially more effective multidisciplinary one. The agile-adaptive, hard-forced and soft-passive approaches are the available alternatives to manage the unknown ongoing and uncertain COVID-19 pandemic. However, the implementation of these different approaches not following the mandates of the experience or the sciences highlighted that managing crisis of "crisis management" seems to be more challenging than controlling the pandemic. The implications of these findings may be useful to build up a post-pandemic new state of "abnormalities".

This study has some limitations. Most of the reviewed literature on "crisis management" from the corporate or the public sector perspective published in top journals consider planning, managing, and responding to ongoing crisis communication (Coombs, 2019) and prescribe potential "strategies" to be followed by all. They are similar to the recent literature on managing the COVID-19 that emphasize the idea of a "combat" (Menut, L. et al., 2020) a "battle" (Huang, Z. et al., 2020) or a "fighting" (Li, H. et al., 2020). However, a pandemic is not a war and our societies are not a unified army. For some "strategies" succeed, other's must fail. Maybe Henri Fayol, mentioned by Mees (2018:16), was assertive, suggesting prudence (instead of planning) as one of the main principles of the "scientific management". Management is considered a "soft" and relatively young science but mistranslations, misunderstandings and debates about the basic assumptions of the scientific work are at the center of any sciences.

Without having a clear idea of the "principles" (virtues, utilitarian's, deontologists) that govern the actions, it is hard to value the "problems" and "challenges" that should be correctly identified and overcome. Maybe the potential feminist ethics of the female prime minister leaders Angela Merkel (Germany) and Jacinda Ardern (New Zealand) influenced them not to be morally blind and taken actions toward saving individual lives quicker than others. Much of the problems mentioned by the professionals interviewed in our case study are due to the delay and miscommunication issues among the governance structures and the several different committees created to manage the pandemic. Lack of data and internal sharing information (among hierarchical levels of the public administration and the committees themselves) has been frequently.

Review robust backward and forward theories of managing the current crisis and the approaches to deal with seem to be a promising research agenda. Carefully looking to the scientific contributions of the measures implemented in Asia, Europe and Americas may help to discover and understand the fact that even though the literature of managing crisis emphasizes the learning process, and there are many lessons from different approaches to managing the COVID-19 pandemic, some leaders are not able or do not want to learn. These leaders are creating more crises in crisis behavior, and it is hard to grasp the factors influencing their decision-making. How to control pandemics when leaders disdain of it

saying that it is a “minor flu”, as Bolsonaro said or suggesting that injecting disinfectant inside people could be a treatment for the coronavirus, as Trump did? Managing the crises of the "crisis management" seems to be more challenging than controlling the pandemic of COVID-19.

Local idiosyncrasies that are not addressed to preventing the spread of the virus seems to be more damaging than the different political orientations of the authorities in charge of managing such devastating pandemic. Some countries and cities seem to be learning from each other's experience and expertise. They seem to be better responding to the management of the crises and having a clear idea that the role of science is solving the world's emerging problems benefiting from science for policy – scientific understanding and policy for science – improving the actual policies. Hopefully, the already scientifically or just experienced efficient measures will be incorporated in Brazil and U.S. approaches that, up to now failed, to managing the COVID-19 and are the epicenters of the crisis of the "crisis management".

5. FINAL CONSIDERATIONS

It is hard to say how prepared governments, organizations, and corporations are to deal with the rapidity of large-scale infections of any kind. “Puzzling” (reevaluation/assessment) and “powering” (reform) capacities (Moynihan, 2008) may not be suitable in a context that has no prior experiences in preventing and controlling infectious diseases. However, several issues were discovered while searching for data and information on "crisis management". The low number of articles published about it in public administration and the business, management, and accountant areas of studies, despite recent nuclear accidents and recurrent natural disasters, is surprising.

Notwithstanding the scarcity research findings on "crisis management" published in top management and public administration journals, the review of their content indicates that "crisis management" is a learning process of preventing and responding to each time different disrupted natural, organizational or individual environments and behaviors. Although not unequivocal considered in the research reviewed, the learning process of dealing with "problems" based on universal "principles" to overcome new "challenges" is at the core of “crisis management” from the private and public perspectives.

However, as shown by the professionals working in a contingent center, overcoming coordination and information sharing issues have been the main challenges of managing the ongoing pandemic. Furthermore, when leaders cannot or do not want to learn the many lessons from different approaches to deal with the COVID-19 pandemic, the main challenge becomes managing the crisis of "crisis management". And, to deal with this type of crisis a reconsideration of "crisis management" research is needed taking into account that both sciences for policy and policy for science must be considered in solving the world’s emerging problems.

To overcome the challenges ahead: flatten the curve, reopening all productive activities including schools, and avoid further outbreaks of infections, a reconsideration of the "crisis management" studies and practices are necessary. More multidisciplinary research is needed to overcome the lack of coordination and information sharing issues while managing health, economic, and social crises. Principles in guiding the design and implementation of measures in "crisis management" situations in the private and public sectors should be considered in future studies. Due to the behavioral impacts of the COVID-19, an expanded multidisciplinary "crisis management" approach must be prudently reconsidered to preserve lives and livelihoods.

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